

# Water in Nevada

**A basic overview of hydrologic principles  
as related to America's driest State**

**Michael L. Strobel**



**Cover Photo: Susie Creek north of Carlin in the Humboldt River Basin.**

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While writing the newspaper articles which were compiled to provide the text for this book, numerous people from the USGS Nevada Water Science Center have assisted in the review process. At the risk of overlooking any individual who may have helped, which I apologize for upfront, I will try to identify the people who have directly contributed to this effort. Technical reviewers of the various chapters include David Beck, David Berger, Steven Berris, Daniel Bright, Robert Burrows, Guy DeMeo, Kerry Garcia, Kimball Goddard, Keith Halford, Michael Lico, Douglas Maurer, Russell Plume, David Prudic, Donald Schaefer, Ralph Seiler, Alan Welch, and Jon Wilson. Editorial and technical assistance with illustrations, layout and processing were provided by Nancy Damar, Teresa Fogle-song, Keith Kirk, Patricia Revitzer, Angelia Thacker, and Shannon Watermolen. I would like to thank Kent Harper of the Ely Times for allowing me to publish the weekly column in this newspaper and the many people in White Pine County, Nevada, who read the articles and provided feedback and questions. Most of all, I would like to thank my wife, Carissa, for reviewing most of the articles as I wrote them over the weekends, providing excellent technical feedback and editing, and always being supportive.

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# Preface

Over the many years that I have worked as a hydrologist with the USGS, I have had the opportunity to make numerous presentations and attend hundreds of meetings in which water issues were discussed with the general public. While it was rewarding to see that people have a strong interest in water, it also was frustrating to see people struggle to understand the concepts and the terminology used by hydrologists. The concepts rarely were difficult, but rather that hydrology, like all sciences, has its own language.

Therefore, I felt it was important to try and find a way to discuss hydrology in a way that non-hydrologists could understand. About 14 years ago, I put together a class for teaching basic hydrology principles to people with little-to-no science background. I taught this class at a couple of universities to students who needed more education in hydrology before taking advanced classes and I presented a 3-day version of the class to many different groups of non-hydrologists around the country over the next 10 years. It was rewarding to see people begin to understand and appreciate hydrology once it was presented at a level and in a fashion they could grasp.

This leads up to how and why this book was created. In 2004, I was asked to give a talk to the Tri-County Commission (Lincoln, Nye, and White Pine Counties of Nevada) in Ely, Nevada. Water issues, and mainly the potential of deportation of water from ground-water basins in these counties to southern Nevada, had become a topic of much interest to the residents of this part of Nevada. At this meeting, the State Engineer gave a talk on water law, and I gave an overview of the hydrogeology of eastern Nevada. Questions I received from the audience during and after my talk, along with numerous discussions and words of appreciation following my talk, made me realize that people in the area had a strong interest in hydrology and a need for more information that could help them better understand the water resources in their part of the State.

Not long after the talk, I met with the editor of the local newspaper, the Ely Times, and asked if he would be interested in a few columns that would discuss basic water principles and definitions for the readers in the area. He felt it was a good idea, and so I set off to write a few articles to be printed in the paper. Interest grew and I enjoyed writing the articles, so we continued putting out a column each week, and now I have done more than 50 different articles and I am still writing. Many of the articles deal with specific questions I have received from the readers, whereas others cover general topics and information.

Because of the general knowledge contained in the articles and strong public interest in having the topic of hydrology presented at a level for non-hydrologists, it was felt that these articles should be combined into a single document and offered for a wider distribution. I was approached by representatives from the State Engineer's office, SNWA, and NWRA about putting this book together. However, many of the articles were written for a newspaper audience in Ely, Nevada, and not for a wide distribution. Likewise, some of the topics I wrote about in the newspaper have a current interest, such as on-going studies or local events, which may not be appropriate for a book that might be around for a few years. Therefore, I have selected articles from the newspaper column that have more of a general interest and rewrote some of the information to make it more applicable to all of Nevada.

Writing the column for the Ely Times each week was (and still is) much fun for me. I enjoy discussing hydrology with people and I appreciate the comments and questions I receive. Hopefully, this book will be useful to the readers by increasing their interest and knowledge in hydrology.

The one thing I would like to make clear concerning this book is that I write about hydrology from a completely neutral position. The organization I work for, the USGS, and my own personal convictions are the same in that the information presented and the research completed are intended to be entirely impartial and without bias. Many people wish to use science to push a specific agenda or to justify a specific cause. That is fine for those individuals or groups, and I certainly understand that arming oneself with knowledge is a powerful tool. But from my perspective, and the perspective of this book, all the information provided is for general knowledge and there is no intention to show bias to any one cause or agenda. One of my favorite quotes, and I don't remember the author, is that "the purpose of education is to replace an empty mind with an open mind." There are many sides and many perspectives to every issue, and maybe this book will help in understanding why the issues are important, and maybe even why people see them from different points of view. I hope this book provides some education and that the readers use the knowledge to understand the complex water issues that face Nevada now and in the coming years.

— MICHAEL L. STROBEL, PH.D.  
USGS

